

ABSTRACT

The present invention is directed to a silicate-based sintering aid and a method for producing the sintering aid. The sintering aid, or frit, may be added to dielectric compositions, including barium titanate-based compositions, to lower the sintering

5 temperature. The sintering aid may be a single or multi-component silicate produced via a precipitation reaction by mixing solutions including silicon species and alkaline earth metal species. The sintering aid can be produced as nanometer-sized particles, or as coatings on the surfaces of pre-formed dielectric particles. Dielectric compositions that include the sintering aid may be used to form dielectric layers in MLCCs and, in

10 particular, ultra-thin dielectric layers.